

REMARKS

Claims 1-6 and 8-16 are pending in this application. By this Amendment, claim 1 is amended. Claims 7, 17 and 18 are canceled.

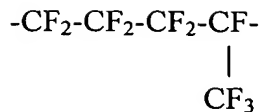
I. Claim Rejections Under 35 U.S.C. 103(a)

Claims 1-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,438,932 to Sieron (hereinafter "Sieron") in view of U.S. Patent No. 6,046,806 to Thompson (hereinafter "Thompson") and in view of U.S. Patent No. 5,260,111 to Valaitis et al. (hereinafter "Valaitis").

The Office Action asserts that Sieron teaches a seal formed of a rubber composition having at least 100 parts by weight of a fluoroelastomer in carbon black (as a filler or reinforcing agent, as known in the art), (col. 2, lines 14-16, lines 21-24 and Fig. 1). Additionally, the Office Action asserts that Sieron discloses that any type of fluoroelastomer may be used (col. 2, lines 14-16).

The fluoroelastomer disclosed in Sieron, or Thompson, is generally distinguished from ethylene propylene rubber, which is a general-purpose rubber. The cost of fluoroelastomer is quite expensive, typically in the range of 100 times higher than the cost of ethylene propylene rubber. Therefore, it is unlikely for one of ordinary skill in the art to utilize such an expensive fluoroelastomer for a piston seal in a disc brake.

Furthermore, Thompson (col. 4, lines 62-64) discloses that "Fluoroelastomers are . . . or fluorinated ethylene-propylene resins being the most preferred." Ethylene propylene rubber of the present invention does not include "fluorinated ethylene-propylene resins" as discussed in Thompson. A chemical formula of "fluorinated ethylene-propylene resins" mentioned in Thompson is as follows:



As shown in the above formula, hydrogen (H) of general ethylene propylene rubber is replaced with fluorine (F). Accordingly, as ethylene propylene rubber of the present invention does not include "fluorinated ethylene-propylene resins" of Thompson, it is not possible to combine Sieron, Thompson, and Valaitis.

The Office Action asserts that Thompson teaches that ethylene propylene resins are a known fluoroelastomer (col. 4, lines 62-64). The Office Action goes on to assert that it would have been obvious to one of ordinary skill in the art to have known that ethylene propylene is a fluoroelastomer, as taught by Thompson, and to have considered its use when having manufactured the seal of Sieron, so as to obtain performance characteristics associated with this material. However, as discussed above, the cost of fluoroelastomer is quite expensive, typically in the range of 100 times higher than the cost of ethylene propylene rubber. Therefore, it is unlikely for one of ordinary skill in the art to utilize such an expensive fluoroelastomer for a piston seal in a disc brake.

The Office Action acknowledges that Sieron fails to teach using 100 parts by weight of the filler in the seal. However, the Office Action goes on to assert that Valaitis teaches the use of between 120 and 250 parts by weight of carbon black filler to 100 parts by weight of polymer (the polymer is clearly understood as being fluoroelastomer). The Office Action then asserts that it would have been obvious to one of ordinary skill in the art to have utilized the teaching of Valaitis regarding the amount of filler to polymer by weight when having manufactured the seal of Sieron, thus optimizing the structural cohesion of the seal. Applicants respectfully traverse this assertion.

As described in the Abstract of Valaitis, the rubber disclosed in Valaitis is used for gluing roofing materials by melting. Therefore, there is no motivation to apply the compound

of thermoplastic film of Valaitis to sealing materials of Sieron. As shown in Table II of Valaitis, the thermoplastic film of Valaitis contains a large amount of paraffinic process oil. This paraffinic process oil is added to provide adhesiveness to the thermoplastic film as an adhesive. Therefore, it is hard to obtain the thermoplastic of Valaitis without adding the paraffinic process oil. Because a piston seal of the present invention is used for a disc brake, the piston seal of the present invention cannot contain paraffinic process oil as in thermoplastic film of Valaitis. Moreover, the thermoplastic film of Valaitis comprises an adhesiveness, as it is used for an adhesive, and is a weak material. Therefore, the thermoplastic film of Valaitis is not suitable for a piston seal material for a disc brake as disclosed in the present invention. Additionally, it is unreasonable to consider adopting a compound of adhesive for roofing materials to that of expensive seal materials disclosed in Sieron.

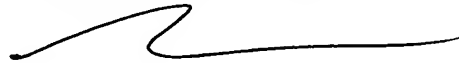
Based on the arguments presented above, independent claim 1 is in condition for allowance. Independent claims 17 and 18 have been canceled by this Amendment. Dependent claims 2-16, either depend directly, or indirectly, from independent claim 1. Therefore, dependent claims 2-16 are also in condition for allowance. It is respectfully requested that the Examiner reconsider and withdraw the rejections.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-6 and 8-16 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Eric D. Morehouse
Registration No. 38,565

JAO:EDM/mdw

Date: November 28, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--